

December 4, 1948.

A. W65 x W595

B. W48 x W55

C. W182 x W595

No yield

12/5/48.

~~By~~ W45 x W595 on loc EMS.

12/8. No yield! (3+ colonies in 15 plates!)  
2nd coli 3'd +4.

Note. #76.A12 streaks out W-1 to W595 series to establish  
mutability.

		mtac
Y53	loc-	M (irregularly; many colo. & stable).
W1	"Mal-	M consistently.
W566	"Gal-	S
W582	"Xyl-	S
W583	"Ar-	S
W595	"MH-	S

The mutation to Gal- seems to have been accompanied by stability of  
loc, -, possibly fortuitous.

12/28/48. Test other Gal- mutants of this series on loc EMS for  
mutability:

W 565	Stable, thin colonies	575 mostly small stable colonies; some large mutable.
W 566	" heaped-up centers.	
567	" (very occasional papillae).	
568.	Stable.	
569	v. sm colonies; some revert	
570.	typical mutable.	
571	like 565	
572	like 567	
573	stable large colonies	
574	typical mutable	
		576 small colonies uniformly.

12/6/48

A. W126B x Y87B see 373.

B. W495 x W45

C. " W48

D. " W65

E. " W182

Yields low:

A. 5 plates 100/plate. 3+ colonies. S.O. on Lee EMPB + EMS.  
+←

B. 10 plates + 2/plate 2+ colonies. ++

C. " ca 4/plate No +

D. " ca 1/plate No +

E. 9 " " No +

12/5/48.

Rich 1 - colony from each of four mosaics of H119 - H122 + test as indicated.

M = mutable  
S = stable

		Lac	U <sub>1</sub>	Burial	Urb.	Summary:	Bug	V
119	A	- S	S	-	TM		8	+ R
	B	- M	R	+	TM		1	+ S
	C	- S	S	-	TL		2	- R
	D	- H?	S	± H	T	* ✓	5	- S
120	A	- M	R	+	M		suggesting linkage of Lac, Burial R.	
	B	- M	R	+	MT			
	C	- M	R	+	M			
	D	- M	R	+	T			
121	A	- M	R	+	MT	* ✓		
	B	- S	S	-	(MTL)			
	C	- M	R	+	<del>M</del> M	* ✓		
	D	- S	S	-	MTL			
122	A	- S	R	-	MT	✓		
	B	- S	S	-	TL	✓		
	C	- M	R	+	MT	✓		
	D	- S	R.	+	MT	✓		
from prev. data	Y87	- M	R	+	BM			
	W126	- S	S	-	TLB,			

6S:10R

Note preponderance of T- and M- speaks out indefinite Burial tests. \*  
There is a general correlation between mutability and Burial - but it is not perfect here

# Maintenance of heterozygotes.

380.

12/14/48.	H1	<sup>0</sup> v?	<sup>1</sup> vv	
lac	22	All+	All+	Return to previous EMS plates.
lac	52	✓	vv	
lac	62	✓	✓	
lac	72	vv	v?	
Xyl	85	✓	✓	
Xyl	93	vv	vv	
lac	118	✓	✓	

+ colonies from previous EMS plates restreaked as EMS. These restreaked, 2/type, on EMB and streaked as EMS; also on Nutrient agar slant (subculture 1).

Ag. streak out NA slant from H1 and H118 to determine feasibility of recovery at this stage.

4 tests each.

H1. 1-3 Var.

4++ or Var?

H118. All 4 are Var.

This may be a suitable method



12/23/48.

Cf. W460 on 1% and 3% Lac EMB.

At 48 hrs. W460 is nearly +++ on 3% lactose  
still slow on 1% " .

Streak out W595 on EMB galactose for reversion.

Test revertants on lactose for mutability.

(W660.) #4. All are Lac mutable like Y53.

Dec. 18, 1948.

Cross W45 x W595 on Lac Synthetici media.

- A) "EMA" .5% asparagine as C source.
- (B) EMS, fresh batch. Na succ "
- (C) EMA+B. Asparagine + Succinate .5% each.
- (D) Like B. But standard.

} Very heavy  
(4x conc.)  
mucula.

1-8. A) 8+ / 11 plates. A few lac-. Pick + test +

9-15. B) 7+? / 13 plates. Swirl -.

16-40. C) 12 plates. Poorly scored, but yields much higher. 25+.

42. D) 4 plates. 15+.

Very few scored + on EMB. Some were lac unstable. (W45?)  
6++ altogether Numerous slow + à la 389.



12/29- /48.

- 1. 26 ✓
- 2. 46
- 3. 171 ✓
- 4. 188 ✓

not heterozygous.

: H139, 140, 141.

	lac	Xyl	Hammitol	Gal	Arab	Mal
139:	±	±	-	++		
140	±	±	±	++		
141	±	+	-	++		

12/23/48.

Recover H93 from nutrient agar slant and from ~~the~~<sup>Xyl.</sup> plates from NA to Xyl EMB. Prod. Xyl-. Ca 2% mosaic colonies.

nutrient agar probably remains a preferred means of maintaining heterozygotes.

similarly on EMS Xyl. Pick a few to Xyl EMB to test recovery of H-93.

from EMS plate 7 1/2 are still mosaic. Recover likewise from EMB; EMS Xyl.

When a heterozygous colony is streaked out on

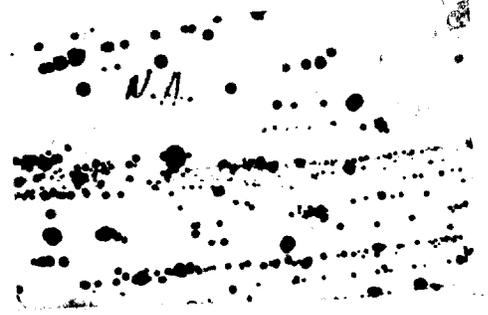
EMB:

Gal negative

Xyl almost all mosaic colonies

Lac slow + (1 or two colonies finally ++).

Lac 3% full +; no signs of variegation.



H93 is therefore probably Xyl +/- Lac +/- Gal +/-

December 24, 1948.

1/2 pint .257 .340.

5(lac) 7 carbays ca 30 hours

i.e. each ml of culture will provide ca equivalent of .02 ml of 319A.

104g. collected from two carbays (70 liters). i.e. equivalent to 20 ml 319A.

58 g. suspended in a very heavy cream in the P 17/80 for grinding but ~~no~~ pump did not draw properly. Retain cream & remaining paste.

12/25/48. Recondition mill & grind remainder of cells. Uncertain basis. (ca 40-50 g. paste probable.)

Ca. 10 ml of extract.

Assays 2970 u/ml.

Galactose mutator run  
Xylose.

12/24/48.

487 7 sec. etc.  
Galactose

80 plates ca 100/plate  
16,000

W570 7 sec. etc.

33 plates. ca 300/plate  
10,000

→ W641. }  
642 }  
643 very thin. }

Xylose.

Galactose:

lac

W

644	1	—
45	2	- thin
46	3	slow +
47	4	slow ++
48	5	- small col.
49	6	slow ++
50	7	slow +
51	8	—
52	9	slow +
53	10	slow +
54	11	slow ++
55	12	slow ++
56	13	slow ±
57	14	- thin
58	15	- thin
59	16	- thin

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use 644 for

for the studies.

pap. to his laboratory, photo. 24 +  
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Inhibition by various batches of  
MB; Eosin. - Crosses.

398.

12/19/5

Weigh out 40 mg Eosin Y and 6.5 mg MB of batches indicated. (Certification numbers as -)

	Eosin	MB	Colonies		Average
			-	+	
1.	23	27	58	78	
2.	23	28 ✓	113	38	
3.	23.	29	93	25	
4.	<del>24</del> 24	11	56	8	
5.	<del>14</del> 14	28 ✓	103	23	
6.	<del>24</del> 24	29	49	49	8.
7.	22 ±	28	2368	23	
8.	<del>12</del> 12	476	146		

all batches gave results comparable to 1/10.